ADMINISTRATIVE NOTE:
NEW REQUIREMENTS/PROCEDURES

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BAA 03-44 PROPOSER INFORMATION PAMPHLET

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The Defense Advanced Research Projects Agency (DARPA) often selects its research efforts through the Broad Agency Announcement (BAA) process. The BAA will be posted directly to FedBizOpps.gov, the single government point-of-entry (GPE) for Federal government procurement opportunities over $25,000. The following information is for those wishing to respond to the Broad Agency Announcement.

Self-Regenerative Systems (SRS), SOL BAA 03-44, Proposals Due: Initial Closing: November 26, 2003, Final Closing: September 24, 2004, POC: Mr. Lee Badger, DARPA/IPTO; FAX: (703) 741-7804

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PROGRAM OBJECTIVES AND DESCRIPTION. The Defense Advanced Research Projects Agency (DARPA) is soliciting proposals for DARPA's Information Processing Technology Office to perform research, development, modeling, design, and testing to support the Self-Regenerative Systems (SRS) program. Network-centric warfare demands robust systems that can respond automatically and dynamically to both accidental and deliberate faults. Adaptation of fault-tolerant computing techniques has made computing and information systems intrusion-tolerant and much more survivable during cyber attacks, but even with these advancements, a system will inevitably exhaust all resources in the face of a sustained attack by a determined cyber adversary. Computing systems and information systems also have a tendency to become more fragile and susceptible to accidental faults and errors over time if manually applied maintenance or refresh routines are not administered regularly. The Self-Regenerative Systems (SRS) program seeks to address these deficiencies by creating a new generation of security and survivability technologies. These "fourth-generation" technologies will bring attributes of human cognition to bear on the problem of reconstituting systems that suffer the accumulated effects of imperfect software, human error, and accidental hardware faults, or the effects of a successful cyber attack. The overarching goals of the SRS program are to implement systems that always provide critical functionality and show a positive trend in reliability, actually exceeding initial operating capability and approaching a theoretical optimal performance level over long time intervals. Desired capabilities include self-optimization, self-diagnosis, and self-healing; it will be important for systems to support self-awareness and reflection in order to achieve these capabilities.

The approach of this program to constructing self-regenerative systems that meet the above needs is to create fourth generation survivability and security mechanisms to complement received first-generation security mechanisms (trusted computing bases, encryption, authentication and access control), second-generation security mechanisms (boundary controllers, intrusion detection systems, public key infrastructure, biometrics) and third-generation security and survivability mechanisms (real-time execution monitors, error detection and damage prevention, error compensation and repair). Among other things, new fourth generation technologies will draw on biological metaphors such as natural diversity

and immune systems to achieve robustness and adaptability, the structure of organisms and ecosystems to achieve scalability, and human cognitive attributes (reasoning, learning and introspection) to achieve the capacity to predict, diagnose, heal and improve the ability to provide service.

The vulnerabilities of computing and information systems addressed by this program include mobile/malicious code, denial-of-service attacks, and misuse and malicious insider threats, as well as accidental faults introduced by human error and the problems associated with software aging. The program will build on the advances made in earlier programs addressing the DoD's operational needs for information systems, such as the ability to operate through attacks, maintenance of critical functionality, graceful degradation of non-critical functions in the face of intrusions and attacks when full functionality cannot be maintained, and the ability to dynamically trade off security, performance and functionality as a function of threat.

Fault-tolerant systems deal with accidental faults and errors while intrusion-tolerant systems cope with malicious, intentional faults caused by an intelligent adversary. Combining fault- and intrusion-tolerance technologies produces very robust and survivable systems, but these techniques depend upon resources that may eventually be depleted beyond the point required to maintain critical system functionality. The fourth generation technologies we seek will reconstitute and reconfigure these resources in such a manner that the systems are better protected in the process, reliability is continually improved as vulnerabilities and software bugs are discovered and fixed autonomously, and the ability to provide critical services is never lost.

Assessment and validation of self-regenerative approaches will be carried out to determine their efficacy. The challenge here is that security and survivability requirements have heretofore defied quantification and analytical approaches. Progress made in creating a practical framework for validating intrusion-tolerance techniques will be built upon and extended to validate SRS technologies.

The first phase of this effort is planned to be 18 months long. This is a solicitation for Phase I only. If results are promising, a Phase II follow-on program is a possibility.

Phase I program goals are to create the core technologies needed

- to design and develop systems that provide 100% critical functionality at all times in spite of attacks;
- for a system to learn its own vulnerabilities over time,
- to ameliorate those vulnerabilities,
- to regenerate service after attack, and
- ultimately, to improve its survivability over time.

The ultimate goal at the end of a Phase II program would be to achieve sufficient system robustness and regenerative capacity to provide 100 per cent availability of critical functionality and system integrity in the face of sustained malicious attacks and accidental faults.

There will be four major research thrusts in the Phase I technology development of the program. These areas, along with their success criteria, are as follows:

- *Biologically-inspired diversity.* This research thrust area will create a genetically diverse computing fabric in which diversity limits the impact of any given vulnerability. Coarse-grained diversity (e.g., using several different operating systems or server software packages in an architecture) has been used to achieve intrusion tolerance, but that approach was limited by the relatively small number of manually-created interchangeable operating systems, server packages, and similar software components. The technical approach of the SRS program is to achieve fine-grained diversity at the module level to remove common vulnerabilities and to automatically generate numerous diverse software versions. The success criterion for this thrust is the automatic production of 100 functionally-equivalent versions of a software component with no more than 33 having the same deficiency.
- *"Cognitive immunity" and self-healing.* This research thrust area will show automated cyber immune response and system regeneration. The technical approach will include biologically-inspired response strategies, machine learning, and cognitively-inspired proactive automatic contingency planning. The success criterion for this thrust is the accurate diagnosis of at least 10% of the root causes of system problems and automatic effective corrective action for at least half of those diagnoses.
- *Granular, scalable redundancy.* This research thrust area will increase the practicality of redundancy techniques by dramatically reducing the time required to achieve consistency among replicas after an update. This thrust area will attack the consistency problem in two distinct sub-areas—a centralized server setting, and a distributed publish/subscribe setting. Performers who propose to the scalable redundancy thrust area may address either or both sub-areas. Success criteria here include the following: in the centralized server setting, attain a three-fold reduction in latency for achieving consistency of replicated data while tolerating up to five Byzantine failures; in the distributed publish/subscribe setting, attain a fifteen-fold reduction in latency for achieving consistent values of data shared among one hundred to ten thousand participants while using robust epidemic algorithms, where all participants can send and receive events.
- *Reasoning about the insider threat* to preempt insider attacks and detect system overrun. The technical approach will include inferring user goals, enabling anomaly detection, and combining and correlating information from system layers, direct user challenges, etc. The success criterion for this thrust is the thwarting or delaying of at least 10% of insider attacks.

These research areas will explore techniques that span the spectrum from autonomic/reflexive response through and including introspection and learning. Proposals should address only one research thrust area. A proposer may submit multiple proposals. The success criteria for the four thrust areas constitute the program's gating evaluation criteria for the possibility of a Phase II follow-on program. They are minimum requirements to gain confidence that self-regenerative systems are feasible. A Phase II program would seek much higher levels of performance. Phase I offerors are strongly encouraged to aim for performance that exceeds these criteria where possible.

Deleted: These research areas will explore techniques that span the spectrum of human mental function, from autonomic/reflexive response through and including introspection and learning.

It is envisioned that a Phase II program would integrate the more promising techniques into an exemplar system prototype to demonstrate the advantages of implementing these technologies in high value critical applications. The system demonstrated would exhibit the fourth generation capabilities of self-optimization, self-awareness, self-diagnosis, self-healing and reflection.

Offerors must state in their proposals a plan for providing deliverables for installation, training, manuals, etc. required for evaluation by the testing facility, as well as travel costs. Offerors should support the technical feasibility of their concept or idea and discuss the future development of their ideas, validation and transition.

TEST AND EVALUATION. Performers will test and evaluate their technologies using their own facilities and report results at PI meetings. In addition, performers will provide software distributions and will document all test and evaluation choices and procedures (hardware, software environment, scenario, etc.) with enough clarity for a third party to repeat the evaluations. Regarding test and evaluation, an Independent Evaluation Team (IET) will collaborate with performers to foster out-of-the-box thinking and sharing of results among performers and the larger research community. Because progress in the scalable, granular redundancy research thrust area is relative to a baseline that is very sensitive to the testing environment, performers in that area will construct a testbed environment, establish a test procedure, test the best available techniques to determine baseline performance in that testbed, and report their baseline results at the first PI meeting. Testing and evaluation for granular, scalable redundancy techniques developed in Phase I will be conducted on an identical testbed.

PROGRAM SCOPE. Proposed research should investigate innovative approaches and techniques that lead to or enable revolutionary advances in the state-of-the-art. Proposals are not limited to the specific strategies listed above, and alternative visions will be considered. However, proposals should be for research that substantially contributes towards the goals stated. Specifically excluded is research that primarily results in minor evolutionary improvement to the existing state of practice or focuses on special-purpose systems or narrow applications.

This solicitation is for Phase I only. A separate full and open solicitation is possible at a later date for a Phase II program. Offerors should not propose a base effort exceeding 18 months. Any such proposal doing so may be disregarded. Options for up to an additional twelve months over the base period will be acceptable. Any offeror may submit a proposal in accordance with the requirements and procedures identified in this BAA. These requirements and procedures include the form and format for proposals. Phase I is planned to be unclassified, but Phase II is likely to be a classified program. Offerors who desire to be able to participate in a possible Phase II program are encouraged to be willing and able to obtain appropriate security clearances.

Deleted: Offerors for the technology development of self-regenerative systems may be foreign firms or may team with foreign firms as long as the firm meets the criteria in this solicitation and the Government is permitted to conduct business with the firm. Offerors for the technology development of self-regenerative systems may also include foreign personnel as part of their proposed resources as long as these personnel qualify technically. It is strongly recommended that researchers in Phase I be willing and able to obtain security clearances in order to be able to continue their work in Phase II.¶

GENERAL INFORMATION

Proposals not meeting the format described in this pamphlet may not be reviewed. Proposals **MUST NOT** be submitted by fax or e-mail; any so sent will be disregarded. This notice, in conjunction with the BAA 03-44 FBO Announcement and all references, constitutes the total BAA. A Frequently Asked Questions (FAQ) list may be provided. The URL for the FAQ will be specified on the DARPA/IPTO BAA Solicitation page. No additional information is available, nor will a formal Request for Proposal (RFP) or other solicitation regarding this announcement be issued. Requests for same will be disregarded. All responsible sources capable of satisfying the Government's needs may submit a proposal that shall be considered by DARPA. Historically Black Colleges and Universities (HBCUs) and Minority Institutions (MIs) are encouraged to submit proposals and join others in submitting proposals. However, no portion of this BAA will be set aside for HBCU and MI participation due to the impracticality of reserving discrete or severable areas of this research for exclusive competition among these entities.

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Security classification guidance on a DD Form 254 (DoD Contract Security Classification Specification) will not be provided at this time since DARPA is soliciting ideas only. After reviewing incoming proposals, if a determination is made that contract award may result in access to classified information, a DD Form 254 will be issued upon contract award. **If you choose to submit a classified proposal you must first receive the permission of the Original Classification Authority to use their information in replying to this BAA.**

SUBMISSION PROCESS

This Broad Agency Announcement (BAA) requires completion of a **BAA Cover Sheet** for each Proposal prior to submission. This cover sheet can be accessed at the following URL:

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http://www.dyncorp-is.com/BAA/index.asp?BAAid=03-44

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After finalizing the **BAA Cover Sheet**, the proposer must print the **BAA Confirmation Sheet** that will automatically appear on the web page. Each proposer is responsible for printing the BAA Confirmation Sheet and attaching it to every copy. The Confirmation Sheet should be the first page of the Proposal. If a proposer intends on submitting more than one Proposal, a unique UserId and password must be used in creating each BAA Cover Sheet. Failure to comply with these submission procedures may result in the submission not being evaluated.

Proposers must submit the original and **3** copies of the full proposal *and* **2** electronic copies (i.e., **2** separate disks) of the full proposal (in PDF or Microsoft Word 2000 for IBM-compatible format on a 3.5-inch floppy disk, 100 MB Iomega Zip disk or cd). **Mac-formatted disks will not be accepted**. Each disk must be clearly labeled with BAA 03-44, proposer organization, proposal title (short title recommended) and "Copy <n>___ of 2". The full proposal (original and designated number of hard and electronic copies) must be submitted in time to reach DARPA by 4:00 PM (ET) **Wednesday, November 26, 2003,** in order to be considered during the initial evaluation phase. However, **BAA 03-44, SRS** will remain open until 12:00 NOON (ET) **September 24, 2004.** Thus, proposals may be submitted at any time from issuance of this BAA through **September 24, 2004**. While the proposals

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submitted after the **Wednesday, November 26, 2003,** deadline will be evaluated by the Government, proposers should keep in mind that the likelihood of funding such proposals is less than for those proposals submitted in connection with the initial evaluation and award schedule. DARPA will acknowledge receipt of submissions and assign control numbers that should be used in all further correspondence regarding proposals.

Restrictive notices notwithstanding, proposals may be handled for administrative purposes by support contractors. These support contractors are prohibited from competition in DARPA technical research and are bound by appropriate non-disclosure requirements. Input on technical aspects of the proposals may be solicited by DARPA from non-Government consultants /experts who are also bound by appropriate non-disclosure requirements. However, non-Government technical consultants/experts will not have access to proposals that are labeled by their offerors as "Government Only". Use of non-government personnel is covered in FAR 37.203(d).

NEW REPORTING REQUIREMENTS/PROCEDURES: The Award Document for each proposal selected and funded will contain a mandatory requirement for submission of DARPA/IPTO Quarterly Status Reports and an Annual Project Summary Report. These reports, described below, will be electronically submitted by each awardee under this BAA via the DARPA/IPTO Technical – Financial Information Management System (T-FIMS).

The T-FIMS URL will be furnished by the government upon award. Detailed data requirements can be found in the Data Item Description (DID) DI-MISC-81612 available on the Government's ASSIST database (http://assist.daps.dla.mil/quicksearch/). Sample instructions that specify how information in the DID may be collected (content and frequency requirements) can be found in Appendix A. An outline of T-FIMS report requirements is as follows:

(a) Status Report: Due at least three (3) times per year – Jan, Apr, & Oct
  1) Technical Report
    a) Project General Information
    b) Technical Approach
      - Accomplishments
      - Goals
      - Significant changes / improvements
    c) Deliverables
    d) Transition Plan
    e) Publications
    f) Meetings and Presentations
    g) Project Plans
    h) Near term Objectives
  2) Financial Report
  3) Project Status / Schedule

(b) Project Summary (PSum): Due once each fiscal year in July

1) All Sections of the Status Report
2) QUAD Chart
   a) Visual Graphic
   b) Impact
   c) New Technical Ideas
   d) Schedule

PROPOSAL FORMAT

Proposals shall include the following sections, each starting on a new page (where a "page" is 8-1/2 by 11 inches with type not smaller than 12 point) and with text on one side only. The submission of other supporting materials along with the proposal is strongly discouraged. Sections I and II (excluding the submission cover/confirmation sheet and section M) of the proposal shall not exceed 37 pages. Maximum page lengths for each section are shown in braces { } below.

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Section I. Administrative

The BAA Confirmation Sheet {1 page} described under "Submission Process" will include the following:

A. BAA number;
B. Technical topic area;
C. Proposal title;
D. Technical point of contact including: name, telephone number, electronic mail address, fax (if available) and mailing address;
E. Administrative point of contact including: name, telephone number, electronic mail address, fax (if available) and mailing address;
F. Summary of the costs of the proposed research, including total base cost, estimates of base cost in each year of the effort, estimates of itemized options in each year of the effort, and cost sharing if relevant;
G. Contractor's type of business, selected from among the following categories: "WOMEN-OWNED LARGE BUSINESS," "OTHER LARGE BUSINESS," "SMALL DISADVANTAGED BUSINESS [*Identify ethnic group from among the following: Asian-Indian American, Asian-Pacific American, Black American, Hispanic American, Native American, or Other*]," "WOMEN-OWNED SMALL BUSINESS," "OTHER SMALL BUSINESS," "HBCU," "MI," "OTHER EDUCATIONAL," "OTHER NONPROFIT", or "FOREIGN CONCERN/ENTITY."

Section II. Detailed Proposal Information

This section provides the detailed discussion of the proposed work necessary to enable an in-depth review of the specific technical and managerial issues. Specific attention must be given to addressing both risk and payoff of the proposed work that make it desirable to DARPA.

[IMPORTANT NOTE: WITH THE EXCEPTION OF E, C THROUGH H HAVE BEEN REVISED.] Page-counts are maximums.

A. {1 Page} Innovative claims for the proposed research.
This page is the centerpiece of the proposal and should succinctly describe the unique proposed contribution.

B. {1 Page} Proposal Roadmap
The roadmap provides a top-level view of the content and structure of the proposal. It contains a synopsis (or "sound bite") for each of the nine areas defined below. It is important to make the synopses as explicit and informative as possible. The roadmap must also cross-reference the proposal page number(s) where each area is elaborated. The nine roadmap areas are:

1. Main goals of the proposed research (stated in terms of new, operational capabilities for assuring that critical information is available to key users).

2. Tangible benefits to end users (i.e., benefits of the capabilities afforded if the proposed technology is successful).

3. Critical technical barriers (i.e., technical limitations that have, in the past, prevented achieving the proposed results).

4. Main elements of the proposed approach.

5. Rationale that builds confidence that the proposed approach will overcome the technical barriers. ("We have a good team and good technology" is not a useful statement.)

6. Nature of expected results (unique/innovative/critical capabilities to result from this effort, and form in which they will be defined).

7. The risk if the work is not done.

8. Criteria for scientifically evaluating progress and capabilities on an annual basis.

9. Cost of the proposed effort for each performance year.

C. {2 Pages} Research Objectives:

1. Problem Description. Provide concise description of problem area addressed by this research project.

2. Research Goals. Identify specific research goals of this project. Identify and quantify expected performance improvements from this research. Identify new capabilities enabled by this research. Identify and discuss salient features and capabilities of developmental hardware and software prototypes.

3. Expected Impact. Describe expected impact of the research project, if successful, to problem area.

D. Technical Approach:

1. {12 Pages} Detailed Description of Technical Approach. Provide detailed description of technical approach that will be used in this project to achieve research goals. Specifically identify and discuss innovative aspects of the technical approach. This section should be well motivated and should clearly articulate the new idea and reasoning/evidence giving confidence that the idea can work.

2. {2 Pages} Comparison with Current Technology. Describe state-of-the-art approaches and the limitations within the context of the problem area addressed by this research.

E. {3 Pages} Statement of Work (SOW) written in plain English, outlining the scope of the effort and citing specific tasks to be performed and specific contractor requirements.

F. Schedule and Milestones:

1. {1 Page} Schedule Graphic. Provide a graphic representation of project schedule including detail down to the individual effort level. This should include but not be limited to, a multi-phase development plan, which demonstrates a clear understanding of the proposed research; and a plan for periodic and increasingly robust experiments over the project life that will show applicability to the overall program concept. Show all project milestones. Use absolute designations for all dates.

2. {2 Pages} Detailed Individual Effort Descriptions. Provide detailed task descriptions for each individual effort in schedule graphic.

G. {2 Pages} Deliverables Description. List and provide detailed description for each proposed deliverable. Include in this section all proprietary claims to results, prototypes, or systems supporting and/or necessary for the use of the research, results, and/or prototype. If there are no proprietary claims, this should be stated. The offeror must submit a separate list of all technical data or computer software that will be furnished to the Government with other than unlimited rights (see DFARS 227.) Specify receiving organization and expected delivery date for each deliverable.

H. {2 Pages} Technology Transition and Technology Transfer Targets and Plans. Discuss plans for technology transition and transfer. Identify specific military and commercial organizations for technology transition or transfer. Specify anticipated dates for transition or transfer. If software developed by the project will not be released under an Open Source license, provide clear reasoning showing that the technology transition plan is likely to be more successful than Open Source would be at making the software available to interested researchers and commercial enterprises.

I. {2 Pages} Personnel and Qualifications. List of key personnel, concise summary of their qualifications, and discussion of proposer's previous accomplishments and work in this or closely related research areas. Indicate the level of effort to be expended by each person during each contract year and other (current and proposed) major sources of support for them and/or commitments of their efforts. DARPA expects all key personnel associated with a proposal to make substantial time commitment to the proposed activity.

J. {1 Page} Facilities. Description of the facilities that would be used for the proposed effort. If any portion of the research is predicated upon the use of Government Owned Resources of any type, the offeror shall specifically identify the property or other resource required, the date the property or resource is required, the duration of the requirement, the source from which the resource is required, if known, and the impact on the research if the resource cannot be provided. If no Government Furnished Property is required for conduct of the proposed research, the proposal shall so state.

K. {1 Page} Experimentation Plans. Offerors should identify experiments to test the hypotheses of their approaches and be willing to work with other contractors in order to develop joint experiments in a common testbed environment. Offerors should expect to participate in teams and workshops to provide specific technical background information to DARPA, attend semi-annual Principal Investigator (PI) meetings, and participate in numerous other coordination meetings via teleconference or Video Teleconference (VTC). Funding to support these various group experimentation efforts should be included in technology project bids.

L. {5 Pages} Cost. Cost proposals shall provide a detailed cost breakdown of all direct costs, including cost by task, with breakdown into accounting categories (labor, material, travel, computer, subcontracting costs, labor and overhead rates, and equipment), for the entire contract and for each Government fiscal year (October 1 – September 30), divided into quarters. Where the effort consists of multiple portions that could reasonably be partitioned for purposes of funding, these should be identified as contract options with separate cost estimates for each.

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M. Contractors requiring the purchase of information technology (IT) resources as Government Furnished Property (GFP) **MUST** attach to the submitted proposals the following information:

1. A letter on Corporate letterhead signed by a senior corporate official and addressed to **<PM's Title & Name>,** DARPA/IPTO, stating that you either can not or will not provide the information technology (IT) resources necessary to conduct the said research.

2. An explanation of the method of competitive acquisition or a sole source justification, as appropriate, for each IT resource item.

3. If the resource is leased, a lease purchase analysis clearly showing the reason for the lease decision.

4. The cost for each IT resource item.

IMPORTANT NOTE: IF THE OFFEROR DOES NOT COMPLY WITH THE ABOVE STATED REQUIREMENTS, THE PROPOSAL WILL BE REJECTED.

Awards made under this BAA may be subject to the provisions of the Federal Acquisition Regulation (FAR) Subpart 9.5, Organizational Conflict of Interest. All offerors and proposed subcontractors must affirmatively state whether they are supporting any DARPA technical office(s) through an active contract or subcontract. All affirmations must state which office(s) the offeror supports, and identify the prime contract number. Affirmations should be furnished at the time of proposal submission. All facts relevant to the existence or potential existence of organizational conflicts of interest, as that term is defined in FAR 2.101, must be disclosed in Section II, I. of the proposal, organized by task and year. This disclosure shall include a description of the action the Contractor has taken, or proposes to take, to avoid, neutralize, or mitigate such conflict.

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Section III. Additional Information

A bibliography of relevant technical papers and research notes (published and unpublished) that document the technical ideas, upon which the proposal is based, may be included in the proposal submission. Provide one set for the original full proposal and one set for each of the **3** full proposal hard copies. Please note: The materials provided in this section, and submitted with the proposal, will be considered for the reviewer's convenience only and not considered as part of the proposal for evaluation purposes.

EVALUATION AND FUNDING PROCESSES

Proposals will not be evaluated against each other, since they are not submitted in accordance with a common work statement. DARPA's intent is to review proposals as soon as possible after they arrive; however, proposals may be reviewed periodically for administrative reasons. For evaluation purposes, a proposal is the document described in PROPOSAL FORMAT Section I and Section II (see below). Other supporting or background materials submitted with the proposal will be considered for the reviewer's convenience only and not considered as part of the proposal.

Evaluation of proposals will be accomplished through a scientific review of each proposal using the following criteria, which are listed in descending order of relative importance:

(1) Overall Scientific and Technical Merit: The overall scientific and technical merit must be clearly identifiable and compelling. The technical concept should be clearly defined, developed and defensibly innovative. Emphasis should be placed on the technical excellence of the development and experimentation approach.

(2) Innovative Technical Solution to the Problem: Proposed efforts should apply new or existing technology in an innovative way such as is advantageous to the objectives. The plan on how offeror intends to get developed technology artifacts and information to the user community should be considered. The offeror shall specify quantitative experimental methods and metrics by which the proposed technical effort's progress shall be measured.

(3) Potential Contribution and Relevance to DARPA/IPTO Mission: The offeror must clearly address how the proposed effort will meet the goals of the undertaking and how the proposed effort contributes to significant advances to the DARPA/IPTO mission of preventing strategic surprise.

(4) Offeror's Capabilities and Related Experience: The qualifications, capabilities, and demonstrated achievements of the proposed principals and other key personnel for the primary and subcontractor organizations must be clearly shown.

(5) Plans and Capability to Accomplish Technology Transition: The offeror should provide a clear explanation of how the technologies to be developed will be transitioned to capabilities for military forces. Technology transition should be a major consideration in the design of experiments, particularly considering the potential for involving potential transition organizations in the experimentation process.

(6) Cost Realism: The overall estimated cost to accomplish the effort should be clearly shown as well as the substantiation of the costs for the technical complexity described. Evaluation will consider the value to Government of the research and the extent to which the proposed management plan will effectively allocate resources to achieve the capabilities proposed. Cost is considered a substantial evaluation criterion but is secondary to technical excellence.

The Government reserves the right to select for award all, some, or none of the proposals received. Proposals identified for funding may result in a contract, grant, cooperative agreement, or other transaction depending upon the nature of the work proposed, the required degree of interaction between parties, and other factors. If warranted, portions of resulting awards may be segregated into pre-priced options.

The administrative addresses for this BAA are:

Fax: 703-741-7804 Addressed to: DARPA/IPTO, BAA 03-44
Electronic Mail: baa03-44@darpa.mil
Electronic File Retrieval: http://www.darpa.mil/ipto/Solicitations/solicitations.htm
Mail to: DARPA/IPTO
ATTN: BAA 03-44
3701 N. Fairfax Drive
Arlington, VA 22203-1714

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Appendix A - Sample Instructions for Application of DiD MI-DISC-81612 or Analog

REMARKS.

- REPORTING PERIOD TERMINOLOGY
  - QUARTERLY REPORTING PERIODS:
    - JUL-SEP: COVERS PERFORMANCE FROM 1 JULY - 30 SEPTEMBER
    - OCT-DEC: COVERS PERFORMANCE FROM 1 OCTOBER - 31 DECEMBER
    - JAN-MAR: COVERS PERFORMANCE FROM 1 JANUARY - 31 MARCH
    - APR-JUN: COVERS PERFORMANCE FROM 1 APRIL - 30 JUNE

- ELECTRONIC SUBMISSION. THE CONTRACTOR SHALL ACCESS THE DARPA EXTRANET REPORTING PAGE TO BE FURNISHED AND ELECTRONICALLY SUBMIT ALL REQUIRED REPORTING INFORMATION ACCORDING TO ALL SPECIFICATIONS BELOW.

- POST-AWARD INITIAL SUBMISSION REQUIREMENT: SUBMIT WITHIN 30 CALENDAR DAYS OF AWARD ALL DATA ITEMS IN 1. PROJECT INFORMATION.

- MINIMAL INITIAL REPORT: IF AWARD OCCURS WITHIN 30 CALENDAR DAYS OF END OF QUARTERLY REPORTING PERIOD SUBMIT DATA ITEMS 2.10 ISSUES OR CONCERNS AND 3.2 PROJECT PLANS, ONLY, IN FIRST REPORT. DUE DATE FOR MINIMAL FIRST REPORT IS WITHIN 15 CALENDAR DAYS OF END OF QUARTERLY REPORTING PERIOD THAT INCLUDES AWARD DATE.

- GENERAL QUARTERLY SUBMISSION REQUIREMENTS
  - FREQUENCY: BLOCK 10. INPUT FOUR (4) TIMES YEARLY, ONCE FOR EACH OF THE QUARTERLY REPORTING PERIODS CITED ABOVE, FOR DURATION OF CONTRACT.
  - REPORTING PERIOD: BLOCK 11. REPORT ON PERFORMANCE DURING THE MOST RECENT QUARTERLY REPORTING PERIOD.
  - DUE DATE: BLOCK 12 AND BLOCK 13. SUBMIT WITHIN FIFTEEN (15) CALENDAR DAYS AFTER THE END OF MOST RECENT QUARTERLY REPORTING PERIOD, BEGINNING XXXXX, I.E.
    - FOR REPORTING PERIOD JUL-SEP, DUE DATE IS OCTOBER 15

- FOR REPORTING PERIOD OCT-DEC, DUE DATE IS JANUARY 15
- FOR REPORTING PERIOD JAN-MAR, DUE DATE IS APRIL 15
- FOR REPORTING PERIOD APR-JUN, DUE DATE IS JULY 15

- QUARTERLY CONTENT REQUIREMENTS
  - IF CURRENT SUBMISSION IS FINAL SUBMISSION FOR THIS CDRL ITEM INCLUDE ALL PARAGRAPHS OF REFERENCED DATA ITEM DESCRIPTION (DID), ELSE
    - FOR THE APR-JUN QUARTERLY REPORT, INCLUDE ALL PARAGRAPHS OF REFERENCED DID
      FOR 3.2.1. PLANNED ACTIVITIES, IN ADDITION TO REPORTING PLANNED ACTIVITIES FOR NEXT QUARTER, INCLUDE A TOP-LEVEL BULLET LIST OF PLANNED ACTIVITIES FOR TIME PERIOD BEGINNING 1 OCTOBER OF CURRENT YEAR AND ENDING 31 DECEMBER OF NEXT YEAR.
    - FOR ALL OTHER QUARTERLY REPORTS, INCLUDE ALL PARAGRAPHS OF THE REFERENCED DID EXCEPT FOR DID PARAGRAPH 1.2 PROJECT DESCRIPTION (AND ALL SUB-ELEMENTS OF 1.2)

- GENERAL MONTHLY SUBMISSION REQUIREMENTS
  - FREQUENCY: BLOCK 10. INPUT TWELVE (12) TIMES YEARLY FOR DURATION OF CONTRACT.
  - REPORTING PERIOD: BLOCK 11. REPORT ON PERFORMANCE DURING PREVIOUS MONTH.
  - DUE DATE: BLOCK 12 AND BLOCK 13. SUBMIT WITHIN FIFTEEN (15) CALENDAR DAYS AFTER END OF PREVIOUS MONTH.

- MONTHLY CONTENT REQUIREMENTS
  - FOR DURATION OF CONTRACT, SUBMIT REFERENCED DID ITEMS 2.3 INCURRED EXPENSES THIS PERIOD AND 2.4 INCURRED EXPENSES TO DATE, AS LUMP SUM TOTAL ONLY.

- CONCURRENT SUBMISSION REQUIREMENTS
  - FOR DURATION OF CONTRACT SUBMIT 2.5 INVOICES THIS PERIOD AND 2.6 INVOICES TO DATE, AS INVOICES ARE SUBMITTED FOR PAYMENT. PERIOD IN 2.5 DENOTES TIME SINCE LAST SUBMISSION OF INVOICE(S).

- FORMAT
  - GENERAL FORMAT INSTRUCTIONS: COMPLY WITH ALL INSTRUCTIONS DELINEATED ON THE DARPA EXTRANET REPORTING PAGE.

- SPECIAL FORMAT INSTRUCTIONS: SUBMIT 3.1.7, PUBLICATIONS THIS PERIOD, IN ADOBE ACROBAT (PDF) FILE FORMAT. SUBMIT 1.2.3.1, SCHEDULE GRAPHIC IN EITHER POWERPOINT (PPT), JPG, TIFF, OR PDF FILE FORMAT. SUBMIT 1.2.6, QUAD-CHART, IN MICROSOFT POWERPOINT (PPT) FILE FORMAT.

- INPUT OF PROPRIETARY INFORMATION:
  - PROPRIETARY INFORMATION MAY BE ENTERED ONLY FOR THE FOLLOWING ITEMS AND ONLY IN THOSE AREAS DESIGNATED FOR SUCH INPUT ON THE DARPA EXTRANET REPORTING PAGE
    - 1.2.2.1 DETAILED DESCRIPTION OF TECHNICAL APPROACH
    - 1.2.2.2 COMPARISON WITH CURRENT TECHNOLOGY
    - 3.1.2 TECHNICAL ACCOMPLISHMENTS THIS PERIOD
    - 3.2.1 PLANNED ACTIVITIES

- CLASSIFICATION: THE ENTIRE REPORT SHALL BE UNCLASSIFIED.

- INCLUDE THIS R&D PROJECT SUMMARY ON THE FINAL DD FORM 250.